

TECHNICIAN GUIDE TO RANGE SITES AND RANGE CONDITION WITH INITIAL STOCKING RATE
15"-19" PRECIPITATION ZONE BLACK HILLS
KEY CLIMAX PLANTS AND OTHERS THAT INVADE

Key Climax Plants	Maximum Percentage in Climax by Range Site																
	WL	Sb	SS	LL	OV	CyO	SL	Sa	Sy	Ly	Cy	DC	SwSy	SwLy	SwCy	VS	Sh
Alkali bluegrass			10				5										
Alkali cordgrass			40d														
Alkali sacaton			35d				40d										
Bearded wheatgrass		10d			5*					5*							
Big bluegrass				10d	5*d	5*d						5*d				5*d	
Big bluestem				10d	10d	10d				5*d	5*d					5*d	
Blue and hairy grama								5*	5*	10	5*		5*	5*	5*	5*	5*
Bluebunch wheatgrass										5*d			15d	25d	10d	35d	10d
Bluejoint reedgrass		5*d															
Blue wildrye					10d	10d			10d	10d					5*d	5*d	
Buffalograss											5*	5*				5*	5*
Canada wildrye		5*d		10d		5*d		5*d									
Canby bluegrass					5*d	5*d			5*d	5*d	5*d	5*d					
Columbia needlegrass				10d	10d	10d			10d	25d	25d	5*					
Cusick bluegrass										10	10						
Fowl bluegrass		5*			5*	5*				5*	5*				5*	5*	
Green needlegrass				25d	25d	50d				25d	50d	60d				10d	5*d
Indian ricegrass								15d	10d	5*d				5*d			
Inland saltgrass			10				10										10
Little bluestem				5*d		10d			5*d	5*d	5*d		10d	25d	10d	25d	5*d
Mat muhly		5*	5	5*	5*	5*											
Nebraska sedge	50d	25d															
Needleandthread				5*	5*			10	20	15			30	15		5*d	
Needleleaf sedge								5*	5*								
Northern reedgrass	25d	5*d															
Nuttall alkaligrass						10d											
Plains reedgrass										5*						5*	
Prairie cordgrass		40d														10d	
Prairie dropseed																	
Prairie junegrass				5*					5*	5*				5*	5*	10	
Prairie sandreed					15d			30	30d				35d				5*d
Pumpelly bromegrass		10d		10d						5*d	5*d						
Red threeawn																	5*
Rhizomatous wheatgrass		5*	20d	10	25	30	25d	5*	10	25	30	50d	10	15	30	5*d	25d
Richardson needlegrass				5*d	5*d				10d	25d	10d						
Sandberg bluegrass				5*				5*		5*	5*	5*	5*	5*	5*	5*	5*
Sand bluestem							50d	10d					10d				5*d
Sand dropseed								5*	5*					5*			
Sideoats grama										10d	15d		5*d	10d	15d	10d	
Slender wheatgrass		15d			5*d	5*d				5*d							
Spike fescue										5*d			10d	10d		10d	
Spike oatgrass									5*d	5*d							
Spike sedge	10	10	5										5*	5*		10	
Stoneyhills muhly																	
Switchgrass		10d		5*d	5*d	5*d											
Threadleaf sedge								5*	5*	5*			10		5*	5*	5*d
Timber danthonia															5*	5*	5*d
Tufted hairgrass	25d	5*d															
1/ Perennial Forbs	10	10	5	10	15	15	5	10	15	15	10	10	15	10	10	15	10
Big sagebrush										5	5	10				5	
Chokecherry		5a		5a	5a	5a										10	10
Conifers																	
Cottonwoods				10													
Greasewood			10				10										
Green ash				5a													
Hawthorne		5a		5a	5a	5a											5
Rubber rabbitbrush			5				5										
Silver sagebrush				5a													
Skunkbush sumac													5a	5		5	
Snowberry		5a		5a	5a	5a		5	5				5a				
Wild plum				5a	5a	5a											
Wildrose				5a				5	5				5a				
Willows	5	5a															
* Total % of these species allowed		10		20	25	20		20	20	25	20	20	15	15	15	15	10
a Total % of these species allowed		10		15	10	15							10				

Suggested Initial Stocking Rates by Site (AUM's/Acre)

Range Condition	% Original Vegetation	WL	Sb	SS	LL	OV	CyO	SL	Sa	Sy	Ly	Cy	DC	SwSy	SwLy	SwCy	VS	Sh
Excellent	76 - 100	3.0	2.0	1.5	.8	.8	.8	.7	.6	.6	.6	.6	.5	.4	.4	.4	.3	.3
Good	51 - 75	2.5	1.5	1.2	.7	.7	.7	.6	.5	.5	.5	.5	.4	.3	.3	.3	.2	.2
Fair	26 - 50	1.5	1.0	.8	.4	.4	.4	.3	.3	.3	.3	.3	.25	.2	.2	.2	.1	.1
Poor	0 - 25	1.0	.6	.4	.2	.2	.2	.15	.15	.15	.15	.15	.12	.1	.1	.1	.05	.05

Legend: 1/ Count no more than 5 percent of any one species.
Blanks - Not Important

Invaders: All annuals
All exotics
Broom snakeweed
Curlycup gumweed
Foxtail barley
Thistles
Thumblegrass

WL - Wetland
Sb - Subirrigated
SS - Saline Subirrigated
LL - Lowland
SL - Saline Lowland
OV - Overflow
CyO - Clayey Overflow
Sa - Sands
Sy - Sandy
Lv - Loam
Cy - Clayey
DC - Dense Clay
SwSy - Shallow Sandy
SwLy - Shallow Loamy
SwCy - Shallow Clayey
VS - Very Shallow
Sh - Shale

d = Decreaser with livestock use on this site.

CLIMATE

a. Annual precipitation varies from 15 to 19 inches. The normal precipitation pattern shows the lightest fall during December, January and February, increasing rapidly to a peak in May. Precipitation amounts decrease from June to a low in August, increase again to a secondary peak in September, then decrease to the wintertime minimum. Normally about 48% of the annual precipitation, or 7.8 inches, falls between the average 32 deg. freeze dates.

Sunshine is abundant in the area. It is estimated to average about 65% of possible sunshine on an annual basis, ranging from about 55% in the winter to about 75% in late summer.

b. Winds are estimated to average about 8 mph annually with wind velocities higher in the spring and lower in summer. Daytime winds are typically stronger than nighttime and occasionally storms can bring brief periods of quite high winds bettering 75 mph.

c. Temperatures show a wide range between summer and winter and between daily maximums and minimums. This is predominantly due to the high elevation and dry air which permits rapid incoming and outgoing radiation and passage of both warm and cold air masses. Because of cold air outbreaks from Canada and rapid night time radiation cooling, late spring and early fall freezes are not uncommon.

Growth of native cool season plants begins about April 1 and continues to about July 1 and native warm season plants begin about May 15 and continue to about August 15. September may produce fall green-up of plants lasting through October.

WILDLIFE

This zone is characterized by the following wildlife species: white-tailed deer, turkey, mule deer, coyote, bobcat, red fox, raccoon, skunk, cottontail rabbit, marmot, beaver, muskrat, chipmunk, various rodents and song birds, waterfowl, eagles, hawks, owls, mourning doves, magpie and crow.

White-tailed deer and turkey are the dominant game species.

Most species are year long residents. Beaver, muskrat, and waterfowl are found primarily on or adjacent to watercourses.

Some species are associated with particular range sites. Examples are:

Lowland and Wetland Sites--beaver, muskrat, waterfowl.

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Loamy, Clayey, Saline Upland and Shale--prairie dog, badger.

Shallow sites--may be important white-tailed deer winter range.

Threatened or endangered species that may occupy this zone include peregrine falcon, bald eagle and black-footed ferret.

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE

1 - Preferred 3 - Undesirable
2 - Desirable * - Poisonous

PLANT SPECIES	ELK &		HORSES	DEER	ANT.
	CATTLE	SHEEP			

Grasses & Grass-like Plants					

Alkali bluegrass	2	1	2	1	1
Alkali cordgrass	2	3	2	3	3
Alkali sacaton	1	2	1	2	2
Bearded wheatgrass	1	2	1	2	2
Big bluegrass	1	1	1	1	1
Big bluestem	1	1	1	2	3
Blue grama	2	2	2	2	2
Blue wildrye	1	2	1	2	3
Bluebunch wheatgrass	1	1	1	2	2
Bluejoint reedgrass	1	2	1	3	3
Buff alograss	2	2	2	2	2
Canada wildrye	1	1	1	2	2
Canby bluegrass	1	1	1	1	1
Columbia needlegrass	1	1	2	2	2
Cusick bluegrass	1	1	1	1	1
Fowl bluegrass	2	2	2	3	3
Green needlegrass	1	1	1	1	1
Hairy grama	2	2	2	2	2
Indian ricegrass	1	1	1	1	1
Inland saltgrass	3	3	3	3	3
Inland sedge	2	2	2	3	3
Little bluestem	1	1	1	2	2
Mat muhly	3	3	3	3	3
Nebraska sedge	1	1	1	2	2
Needleandthread	1	1	1	1	1
Needleleaf sedge	3	3	3	3	3
Northern reedgrass	1	2	1	3	3
Nuttall's alkaligrass	1	1	1	1	1
Plains reedgrass	2	2	2	2	2
Prairie cordgrass	1	2	1	3	3
Prairie junegrass	2	2	2	2	2
Prairie sandreed	1	2	1	3	3
Pumpelly brome	1	1	2	2	3
Red threeawn	3	3	3	3	3
Richardson needlegrass	1	1	2	2	2
Sand bluestem	1	2	1	3	3
Sand dropseed	2	2	2	3	3

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Sandberg bluegrass	2	2	2	2	2
Sideoats grama	1	1	1	2	3
Slender wheatgrass	1	2	1	2	2
Spike oatgrass	1	2	1	2	2
Spike sedge	2	2	2	3	3
Spikefescue	1	2	1	1	2
Stonyhills muhly	2	2	2	3	3
Switchgrass	1	1	1	2	2
Thickspike wheatgrass 2		2	2	2	2
Threadleaf sedge	2	2	2	2	1
Timber danthonia	2	2	2	3	3
Tufted hairgrass	1	1	1	2	2
Western wheatgrass	2	2	2	2	2
Forbs					

Alkali seepweed	3	3	3	3	3
Amaranthus	3	3	3	3	3
American licorice	3	3	3	3	3
American vetch	1	1	1	1	1
Arrowgrass					
Biscuitroot	2	2	3	2	2
Blue-eyed grass	2	1	2	2	2
Bluebell	2	2	2	2	2
Common commandra	3	3	3	3	3
Cudweed sagewort	3	2	3	2	2
Deathcamas					
Dotted gayfeather	1	1	1	1	1
Erigeron	2	2	3	2	2
Eriogonum	3	3	3	3	3
Fleabane	2	2	2	2	2
Fringed sagewort	3	3	3	3	2
Goldenrod	3	3	3	3	3
Green sagewort	3	3	3	3	3
Gromwell	3	3	3	3	3
Groundsel	3	3	3	3	3
Hawksbeard	3	1	3	2	2
Horsetails	3	3	3	3	3
Iris	3	3	3	3	3
Mountain thermopsis	3	3	3	3	3
Nailworts	3	3	3	3	3
Penstemon	1	1	1	1	1
Pointvetch	3	3	3	3	3
Prairie coneflower	1	1	1	1	1
Prairieclovers	1	1	1	1	1
Silverleaf scurfpea	3	3	3	3	3
Starwort	3	3	3	3	3
Stonecrop	3	3	3	3	3
Two-grooved milkvetch					
Violets	2	2	2	2	2
Water hemlock					
Western virginsbower	3	2	3	2	2
Western wallflower	2	2	2	2	2
Western yarrow	3	3	3	3	3

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Wild onion	2	2	2	2	2
Yucca	2	2	3	2	2
Woody Plants					
Big sagebrush	2	2	3	2	2
Chokecherry(a)	2	2	2	1	3
Conifers (b)	3	3	3	3	3
Cottonwood(c)	2	2	2	2	2
Greasewood	2	2	3	2	2
Green ash	3	3	3	3	3
Hawthorne	3	3	3	3	3
Rabbitbrushes	3	1	3	2	1
Silver sagebrush	2	2	2	2	2
Skunkbush sumac	2	2	3	2	2
Snowberry	3	3	3	2	3
Wild plum	2	2	2	2	3
Wild rose	2	2	3	2	2
Willows	1	1	2	1	3
Winterfat	1	1	1	1	1

(a) Leaves are poisonous to sheep and cattle. (b) Ponderosa pine causes abortion in cows. Suspected in deer. (c) Sprouts only.

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site occurs on level or nearly level lands near springs, seeps or sloughs. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by plants that can withstand long periods of submersion in water. Potential vegetation is about 90% grasses and grass-like plants, 5% forbs and 5% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Reedgrasses (Northern, Bluejoint)	10-25
Nebraska sedge	25-50
Tufted hairgrass	10-25
Spike sedge	5-10
Inland sedge	T-5
Forbs	
All following Forbs	5-10*

Blue-eyed grass	Arrowgrass
Iris	Horsetails
Water hemlock	
Woody Plants	
Willows	

*Of plants in these groups, no more than 5% of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 60 to 70 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are annuals and cocklebur. Spike sedge and inland sedge become more dominant as conditions deteriorate.

4. Total Annual Production in Exc. Cond. (lb./Ac. air-dry)

Favorable years - 7,00
Medium years - 6,000
Unfavorable years - 4,500

5. Soils:

a. The soils of this site, are deep, poorly drained soils with water tables above the surface for part, but not all of the growing season. They are on nearly level to slightly depressed areas with poor surface drainage. In some places, the surface layers have a high content of organic matter.

b. Soil taxonomic units which characterize this site are:

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides the most production per acre for this precipitation zone. However, the areas of this site are usually small. This site provides good summer and fall forage for cattle and horses. Forage for sheep is fair. Grazing may be limited at times because of wetness.

2. Wood Products - None.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for high runoff. The soil cover complex numbers are:

Excellent	95
Good - high fair	95
Fair	95

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - Recreation value for this site includes hunting and bird watching.

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class	Percent Climax Vegetation	AUM's/Acre	Acres/AUM
Excellent	76 - 100	3.0	.33
Good	51 - 75	2.5	.4
Fair	26 - 50	1.5	.67
Poor	0 - 25	1.0	1.0

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

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Major Land Resource Area (61)
15-19" Black Hills (15-19B1)
SUBIRRIGATED Sb
Correlated Range Site No.G61XY174WY

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site will usually occur adjacent to live streams, lakes, ponds or springs. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by plants that can withstand a high water table throughout most of the growing season. Potential vegetation is about 80% grasses and grass-like plants, 10% forbs and 10% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Prairie cordgrass	25-40
Nebraska sedge	15-25
Slender wheatgrass	5-15
Spike sedge	5-10
Bearded wheatgrass	5-10
Pumpelly bromegrass	5-10
Switchgrass	5-10
All following Grasses and Grass-like Plants	5-10*
Western wheatgrass	Tufted hairgrass
Canada wildrye	Northern reedgrass
Bluejoint reedgrass	Fowl bluegrass
Mat muhly	
Forbs	
All following Forbs	5-10*
Sticky geranium	Blue-eyed grass
American licorice	Western virginsbower
Western yarrow	
Woody Plants	
All following woody Plants	5-10*
Snowberry	Chokecherry
Willows	Hawthorne

*Of plants in these groups, no more than 5,% of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 50 to 60 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are annual forbs. Western wheatgrass, mat muhly, spike sedge and inland sedge become more dominant as conditions deteriorate.

4. Total Annual Production in Exc. Cond. (lb./Ac. air-dry)

Favorable years	- 6,000
Medium years	- 5,000
Unfavorable years	- 3,500

5. Soils:

a. The soils of this site consist of deep (greater than 20" to bedrock), moderately well drained soils with water tables below the surface for all of the growing season. The water table is non-saline and non-alkaline. These areas may have water over the surface, but only for short periods of time.

b. Soil taxonomic units which characterize this site are:

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good summer and fall forage for cattle and horses. Forage for sheep is fair during the summer.

2. Wood Products - None.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for high runoff. The soil cover complex numbers are:

Excellent	85
Good - high fair	90
Fair	90

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - Recreation value for this site includes hunting and bird watching.

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

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8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class	Percent Climax Vegetation	AUM's/Acre	Acres/AUM
Excellent	76 - 100	2.5	.q.
Good	51 - 75	2.0	.5
Fair	26 - 50	1.5	.67
Poor	0 - 25	1.0	1.0

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

Technical Guide, Section IIB
Major Land Resource Area (61)
1 5-1 9" Black Hills (1 5-1 9B1)
SALINE SUBIRRIGATED SS
Correlated Range Site No.G61XY142WY

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site occurs on nearly level bottomlands and adjacent to streams, springs or ponds. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by plants that can withstand a moderately saline and/or alkaline water table. Potential vegetation is about 85% grasses and grass-like plants, 5% forbs and 10% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Alkali cordgrass	25-40
Alkali sacaton	20-35
Western wheatgrass	10-20
Inland saltgrass	5-10
Alkali bluegrass	5-10
Mat muhly	T-5
Spike sedge	T-5
Forbs	
Alkali seepweed	T-5
Woody Plants	
Greasewood	T-10
Rubber rabbitbrush	T-5

*Of plants in these groups, no more than 5% of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 50 to 60 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are annuals. Inland saltgrass becomes more dominant as conditions deteriorate.

4. Total Annual Production in Exc. Cond. (lb./Ac. air-dry)

Favorable years	- 5,000
Medium years	- 4,000
Unfavorable years	- 2,500

5. Soils:

a. The soils of this site are deep (greater than 20" to bedrock) & poorly drained, with saline and/or alkaline water tables below the surface for all of the growing season. These areas may have water over the surface, but only for short periods of time.

b. Soil taxonomic units which characterize this site are:

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good summer and fall forage for cattle, horses and sheep.

2. Wood Products - *None*.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for high runoff. The soil cover complex numbers are:

Excellent	85
Good - high fair	90
Fair	90

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - Potential value of this site for recreation use is low with limited use for hunting.

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

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Major Land Resource Area (61)
1 5-1 9" Black Hills (1 5-1 9B1)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class Percent Climax Vegetation AUM's/Acre Acres/AUM

Excellent	76 - 100	2.0	.5
Good	51 - 75	1.5	.67
Fair	26 - 50	1.0	1.0
Poor	0 - 25	.6	1.7

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site occurs adjacent to streams that run water at least during the major part of the grazing season. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by herbaceous plants that derive no benefit from the water table. Trees and shrubs that grow on this site do benefit from the water table. Potential vegetation is about 70% grasses and grass-like plants. 10% forbs and 20% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Green needlegrass	10-25
Big bluestem	5-10
Canada wildrye	5-10
Columbia needlegrass	5-10
Big bluegrass	5-10
Western wheatgrass	5-10
Pumpelly bromegrass	T-10
All following Grasses and Grass-like Plants	5-20*
Little bluestem	Switchgrass
Sandberg bluegrass	Mat muhly
Richardson needlegrass	Needleandthread
Forbs	Prairie junegrass
All following Forbs	
Purple prairieclover	5-10*
American licorice	Dotted gayfeather
Woody Plants	Green sagewort
Cottonwood	Penstemons
Green ash	Goldenrod
Snowberry	
Wild plum	
Hawthorne	
Chokecherry	
Silver sagebrush	
Wild rose	

*Of plants in these groups, no more than 5% of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 50 to 60 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are Kentucky bluegrass and annuals. Woody plants such as snowberry, silver sagebrush and wild rose become more dominant as conditions deteriorate.

4. Total Annual Production in Exc. Cond. (lb./Ac. air-dry)

Favorable years	- 4,000
Medium years	- 3,300
Unfavorable years	- 2,000

5. Soils:

a. The soils of this site are deep (greater than 20" to bedrock), well drained and moderately to rapidly permeable. A fluctuating water table occurs in these areas and is usually deeper than three feet.

b. Soil taxonomic units which characterize this site are:
Barnum silt loam, Lohmiller silty clay loam

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good spring, summer and fall forage for cattle and horses. Forage for sheep is fair during summer.

2. Wood Products - This site has no potential for lumber. It has limited value for fuel for campfires and fireplaces from cottonwood trees.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for moderate runoff. The soil cover complex numbers are:

Excellent	60
Good - high fair	70
Fair	80

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - Because of shade value of cottonwoods and occurrence of this site along live streams, campgrounds and picnic areas are adapted to this site. Flood hazard should be considered however. Wild plum and chokecherry provide excellent areas to pick berries.

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class Percent Climax Vegetation AUM's/Acre Acres/AUM

Excellent	76 - 100	.8	1 .2
Good	51 - 75	.7	1 .4
Fair	26 - 50	.4	2.5
Poor	0 - 25	.2	5.0

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

Technical Guide, Section IIB
Major Land Resource Area (61)
15-19" Black Hills (15-19B1)
OVERFLOW Ov
Correlated Range Site No.G61XY13OWY

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site occurs on land which receives additional water from overflow of intermittent streams or runoff from adjacent slopes. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by tall and midgrasses. Potential vegetation is about 75% grasses and grass like plants, 15% forbs and 10% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Green needlegrass	10-25
Western wheatgrass	10-25
Prairie sandreed	10-15
Big bluestem	5-10
Blue wildrye	5-10
Columbia needlegrass	5-10
All following Grasses and Grass-like Plants	5-25*
Richardson needlegrass	Bearded wheatgrass
Slender wheatgrass	Big bluegrass
Canby bluegrass	Switchgrass
Needleandthread	Fowl bluegrass
Mat muhly	
Forbs	
All following Forbs	5-15*
American vetch	Prairieclovers
Violets	American licorice
Starwort	Western yarrow
Green sagewort	Goldenrod
Woody Plants	
All following Woody Plants	5-10*
Snowberry	Hawthorne
Chokecherry	Wild plum

*Of plants in these groups, no more than 50% of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 40 to 50 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are Kentucky bluegrass and annuals. American licorice, snowberry, western yarrow, green sagewort and goldenrod become more dominant as conditions deteriorate.

4. Total Annual Production in Exc. Cond. (lb./Ac. air-dry)

Favorable years	- 4,000
Medium years	- 3,000
Unfavorable years	- 2,000

5. Soils:

a. The soils of this site are deep (greater than 20" to bedrock), well drained and moderately to rapidly permeable. Topsoils may vary from a sandy loam through light silty clay loams. Coarser or finer textured surface soils may also be present provided they are less than 2 to 4 inches thick. These areas receive additional water from overflow of intermittent streams or runoff from adjacent slopes.

b. Soil taxonomic units which characterize this site are:
Lohmiller silty clay loam, overflow phase

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good spring summer and fall forage for cattle and horses. Forage for sheep is good during summer.

2. Wood Products - None.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for moderate runoff. The soil cover complex numbers are:

Excellent	60
Good - high fair	70
Fair	80

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

Technical Guide, Section IIB
Major Land Resource Area (61)
15-19" Black Hills (15-19B1)

5. Recreation and Natural Beauty - Recreation value for this site includes hunting. Wild plum and chokecherry provide excellent areas to pick berries.

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class	Percent Climax Vegetation	AUM's/Acre	Acres/AUM
Excellent	76 - 100	.8	1.2
Good	51 - 75	.7	1.4
Fair	26 - 50	.4	2.5
Poor	0 - 25	.2	5.0

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

Technical Guide, Section IIB
Major Land Resource Area (61)
1 5-1 9" Black Hills (1 5-1 9B1)
CLAYEY OVERFLOW Cy0
Correlated Range Site No.G61XY106WY

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site occurs on lands which receive additional water from overflow of intermittent streams or runoff from adjacent slopes. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by tall and midgrasses. Potential vegetation is about 70% grasses and grass like plants, 15% forbs and 15% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Green needlegrass	25-50
Western wheatgrass	20-30
Big bluestem	5-10
Blue wildrye	5-10
Columbia needlegrass	5-10
Little bluestem	5-10
All following Grasses and Grass-like Plants	10-20*
Canada wildrye	Slender wheatgrass
Big bluegrass	Canby bluegrass
Switchgrass	Fowl bluegrass
Mat muhly	
Forbs	
All following Forbs	5-15*
American vetch	Prairieclovers
American licorice	Starwort
Green sagewort	Western yarrow
Goldenrod	
Woody Plants	
All following Woody Plants	5-15*
Snowberry	Hawthorne
Chokecherry	Wild plum

*Of plants in these groups, no more than 5% of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 40 to 50 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are Kentucky bluegrass and annuals. Woody plants, western wheatgrass, American licorice, green sagewort, western yarrow and goldenrod become more dominant as conditions deteriorate.

4. Total Annual Production in Exc. Cond. (lb./Ac. air-dry)

Favorable years	- 4,000
Medium years	- 3,000
Unfavorable years	- 2,000

5. Soils:

a. The soils of this site are deep (greater than 20" to bedrock), well drained and moderately to slowly permeable. The topsoils are the finer portions of silty clay loams, sandy clay loams and clay loams, but may have thin, ineffectual layers of coarser textured surfaces. These areas receive additional water from overflow of intermittent streams or runoff from adjacent slopes.

b. Soil taxonomic units which characterize this site are:
Kyle clay loam

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good year long forage for cattle and horses. Forage for sheep is fair during summer.

2. Wood Products - None.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for moderate runoff. The soil cover complex numbers are:

Excellent	60
Good - high fair	70
Fair	80

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - Recreation value of this site includes hunting. Wild plum and chokecherry provide excellent areas to pick berries.

Technical Guide, Section IIB
Major Land Resource Area (61)
15-19" Black Hills (15-19B1)

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class	Percent Climax Vegetation	AUM's/Acre	Acres/AUM
Excellent	76 - 100	.7	1.4
Good	51 - 75	.6	1.7
Fair	26 - 50	.3	3.3
Poor	0 - 25	.15	6.7

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

Technical Guide, Section IIB
Major Land Resource Area (61)
15-19" Black Hills (15-19B1)
SALINE LOWLAND SL
Correlated Range Site No.G61XY138WY

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site normally occurs on lands which receive additional water from overflow of intermittent streams or runoff from adjacent slopes. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by plants that can withstand moderately saline or alkaline soils. Potential vegetation is about 80% grasses and grass-like plants, 5% forbs and 15% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Alkali sacaton	25-40
Western wheatgrass	15-25
Inland saltgrass	5-10
Nuttall's alkaligrass	T-10
Alkali bluegrass	T-5
Forbs	
All Following Forbs	T-5*
Two-grooved milkvetch	
Pointvetch	
Woody Plants	
Greasewood	5-10
Cottonwood	T-5
Rabbitbrush	T-5

*Of plants in these groups, no more than 5% of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 35 to 45 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are annuals. Inland saltgrass and greasewood become more dominant as conditions deteriorate.

4. Total Annual Production in Exc. Cond. (lb./Ac. air-dry)

Favorable years	- 3,500
Medium years	- 2,900
Unfavorable years	- 1,900

5. Soils:

a. The soils of this site are deep (greater than 20" to bedrock), well drained, moderately to slowly permeable and are moderately to strongly saline and/or alkaline. Higher soluble salt concentrations may be found in the subsoils. These areas are subject to occasional overflow.

b. Soil taxonomic units which characterize this site are:
Haverson loam, saline phase

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good summer, fall and winter forage for cattle, sheep and horses. Spring grazing can be hazardous because of poisonous plants such as two-grooved milkvet ch.

2. Wood Products - None.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for moderate runoff. The soil cover complex numbers are:

Excellent	60
Good - high fair	70
Fair	80

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - Potential for recreation on this site includes the possibility of picnic areas and campgrounds in areas where cottonwood trees are present.

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class	Percent Climax Vegetation	AUM's/Acre	Acres/AUM
Excellent	76 - 100	.7	1.4
Good	51 - 75	.6	1.7
Fair	26 - 50	.3	3.3
Poor	0 - 25	.15	6.7

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site will occur on gently to moderately rolling lands. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by tall and midgrasses. Potential vegetation is about 85% grasses and grass like plants, 10% forbs and 5% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Sand bluestem	25-50
Prairie sandreed	20-30
Indian ricegrass	5-15
Needleandthread	5-10
All following Grasses and Grass-like Plants	10-20*
Canada wildrye	Western wheatgrass
Blue grama	Sandberg bluegrass
Sand dropseed	Threadleaf sedge
Needleleaf sedge	
Forbs	
All following Forbs	5-10*
Prairie coneflower	Prairieclovers
Cudweed sagewort	Amaranthus
Green sagewort	
Woody Plants	
Snowberry	T-5
Wild rose	T-5

*Of plants in these groups, no more than 5% of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 30 to 40 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are

annuals and broom snakeweed. Unpalatable forbs become more dominant as conditions deteriorate.

4. Total Annual Production in Exc. Cond. (lb./Ac. air-dry)

Favorable years	- 3,400
Medium years	- 2,600
Unfavorable years	- 1,800

5. Soils:

a. The soils of this site are deep to moderately deep (greater than 20" to bedrock), well drained and rapidly to very rapidly permeable. Soil textures will vary from loamy sand to sand in the surface and subsoil.

b. Soil taxonomic units which characterize this site are:
Bankard fine sandy loam, Valent loamy sand

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good summer and fall forage for cattle and horses. Forage for sheep is fair during summer and fall.

2. Wood Products - None.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for low runoff. The soil cover complex numbers are:

Excellent	40
Good - high fair	55
Fair	70

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - This site provides a variety of wild flowers in the spring and summer. Recreation value is limited primarily to hunting.

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class	Percent Climax Vegetation	AUM's/Acre	Acres/AUM
Excellent	76 - 100	.6	1.7
Good	51 - 75	.5	2.0
Fair	26 - 50	.3	3.3
Poor	0 - 25	.15	6.7

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

Technical Guide, Section IIB
Major Land Resource Area (61)
15-19" Black Hills (15-19B1)
SANDY Sy
Correlated Range Site No.G61XY150WY

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site usually occurs on land with gentle to steep slopes and alluvial fans. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by tall and midgrasses. Potential vegetation is about 85% grasses and grass like plants, 10% forbs and 5% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Prairie sandreed	15-30
Needleandthread	10-20
Sand bluestem	5-10
Blue wildrye	5-10
Columbia needlegrass	5-10
Richardson needlegrass	5-10
Indian ricegrass	5-10
Western wheatgrass	5-10
All following Grasses and Grass-like Plants	10-20*
Little bluestem	Canby bluegrass
Pumpelly bromegrass	Spike oatgrass
Blue grama	Sand dropseed
Prairie junegrass	Needleleaf sedge
Threadleaf sedge	
Forbs	
All following Forbs	5-15*
Penstemon	Prairie coneflower
Prairieclovers	American vetch
Cudweed sagewort	Silverleaf scurfpea
Western yarrow	Yucca
Woody Plants	
Snowberry	T-5
Wild rose	T-5

*Of plants in these groups, no more than 5% of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 25 to 35 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are broom snakeweed and annuals. Blue grama and unpalatable forbs become more dominant as conditions deteriorate.

4. Total Annual Production in Exc. Cond. (lb./Ac. air-dry)

Favorable years	- 3,000
Medium years	- 2,200
Unfavorable years	- 1,500

5. Soils:

a. The soils of this site are deep to moderately deep (greater than 20" to bedrock), well drained and rapidly permeable. The surface soil must be at least 3 to 6 inches thick (depending on texture and permeability of the subsoil) and will include the following soil textures: fine sandy loam, sandy loam or loamy very fine sand. Coarser top soils may be included if underlain by finer textured subsoils.

b. Soil taxonomic units which characterize this site are:
Alice fine sandy loam

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good spring, summer and fall forage for cattle, sheep and horses.

2. Wood Products - None.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for low runoff. The soil cover complex numbers are:

Excellent	50
Good - high fair	60
Fair	75

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - This site produces a variety of wild flowers in the spring and summer. Recreation value is limited to hunting.

Technical Guide, Section IIB
Major Land Resource Area (61)
15-19" Black Hills (15-19B1)

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class Percent Climax Vegetation AUM's/Acre Acres/AUM

Excellent	76 - 100	.6	1.7
Good	51 - 75	.5	2.0
Fair	26 - 50	.3	3.3
Poor	0 - 25	.15	6.7

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE- (See Attached Sheet)

9. Field Offices - Newcastle, Sundance

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site occurs on nearly level land up to 50% slope. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by midgrasses.

Potential vegetation is about 80% grasses and grass-like plants, 15% forbs and 5% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Rhizomatous wheatgrasses(Western, Thickspike)	10-25
Green needlegrass	10-25
Columbia needlegrass	10-25
Richardson needlegrass	10-25
Needleandthread grass	10-15
Blue wildrye	5-10
Sideoats grama	5-10
Blue grama	5-10
Cusick bluegrass	5-10
All following Grasses and Grass-like Plants	10-25*
Big bluestem	Little bluestem
Bluebunch wheatgrass	Bearded wheatgrass
Slender wheatgrass	Canby bluegrass
Indian ricegrass	Pumpelly brome
Spikefescue	Spike oatgrass
Fowl bluegrass	Sandberg bluegrass
Plains reedgrass	Prairie junegrass
Threadleaf sedge	
Forbs	
All following Forbs	10-15*
American vetch	Prairieclovers
Prairie coneflower	Penstemons
Bluebells	Biscuitroot
Silverleaf scurfpea	Eriogonum
Fleabane	Deathcamas
Fringed sagewort	Cudweed sagewort

Woody Plants
Big sagebrush

T-5

*Of plants in these groups, no more than 50 of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 25 to 35 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are annuals and broom snakeweed. Blue grama and fringed sagewort become more dominant as conditions deteriorate.

4. Total Annual Production in Exc. Cond. (lb./Ac. air-dry)

Favorable years	- 3,000
Medium years	- 2,200
Unfavorable years	- 1 , 500

5. Soils:

a. The soils of this site are deep to moderately deep (greater than 20" to bedrock), well drained, moderately permeable and occur on slopes less than 10%. The surface soil will vary from 3 to 6 inches thick depending on the texture and permeability. The surface soil must be one of the following textures: very fine sandy loam, loam, silt loam and the friable portions of sandy clay loam, silty clay loam and clay loam. Loess material with little or no development is excluded from this site.

b. Soil taxonomic units which characterize this site are:
Renohill

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good spring, summer and fall forage for cattle, sheep and horses.

2. Wood Products - None.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for moderate runoff. The soil cover complex numbers are:

Excellent	55
Good - high fair	65
Fair	80

Technical Guide, Section IIB
Major Land Resource Area (61)
15-19" Black Hills (15-19B1)

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - This site produces a variety of wild flowers in the spring and summer. Recreation value is limited to hunting.

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class Percent Climax Vegetation AUM's/Acre Acres'/AUM

Excellent	76 - 100	.6	1.7
Good	51 - 75	.5	2.0
Fair	26 - 50	.3	3.3
Poor	0 - 25	.15	6.7

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site occurs on nearly level land up to 50% slope. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by tall and midgrasses. Potential vegetation is about 85% grasses and grass like plants, 10% forbs and 5% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Green needlegrass	25-50
Western wheatgrass	20-30
Columbia needlegrass	10-25
Sideoats grama	5-15
Richardson needlegrass	5-10
Cusick bluegrass	5-10
All following Grasses and Grass-like Plants	15-20*
Big bluestem	Little bluestem
Canby bluegrass	Fowl bluegrass
Blue grama	Hairy grama
Buffalograss	Sandberg bluegrass
Forbs	
All following Forbs	5-10*
American vetch	Prairieclovers
Bluebells	Biscuitroot
Western yarrow	Eriogonum
Erigeron	
Woody Plants	
Big sagebrush	T-5

*Of p_2Qnts in t12e~so **groups**, no more t2zan \$,e of ante epeciee ie allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 25 to 35 percent.

Technical Guide, Section IIB
 Major Land Resource Area (61)
15-19" Black Hills (15-19B1)

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are Kentucky bluegrass, broom snakeweed and annuals. Blue grama and big sagebrush become more dominant as conditions deteriorate.

4. Total Annual Production in Exc. Cond. (lb./Ac. air-dry)

Favorable years	- 2,900
Medium years	- 2,000
Unfavorable years	- 1 , 400

5. Soils:

a. The soils of this site are deep to moderately deep (greater than 20" to bedrock), well drained, moderately to slowly permeable and occur on slopes less than 10%. The topsoil must be at least 2 to 5 inches deep and one of the following textures: silty clay, the finer portions of sandy clay loam, silty clay loam and clays which do not develop severe cracks or become extremely hard when dry and very sticky when wet.

b. Soil taxonomic units which characterize this site are:
 Renohill clay loam

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good spring, summer and fall forage for cattle, sheep and horses.

2. Wood Products - None.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for moderate runoff. The soil cover complex numbers are:

Excellent	65
Good - high fair	75
Fair	80

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - This site produces a variety of wild flowers in the spring and summer. Recreation value for this site is limited to hunting.

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site To be determined
at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class Percent Climax Vegetation AUM's/Acre Acres/AUM

Excellent	76 - 100	.6	1.7
Good	51 - 75	.5	2.0
Fair	26 - 50	.3	3.3
Poor	0 - 25	.15	6.7

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site usually occurs on land that is level up to 10% slope. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by tall and midgrasses. Potential vegetation is about 85% grasses and grass like plants, 5% forbs and 10% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Rhizomatous wheatgrasses(Western, Thickspike)	25-50
Green needlegrass	30-60
All following Grasses and Grass-like Plants	10-20*
Columbia needlegrass	
Canby bluegrass	Big bluegrass
Buffalograss	Sandberg bluegrass
Forbs	
All Following Forbs	5-10*
American vetch	
Wild onion	
Biscuitroot	
Fleabane	
Woody Plants	
Big sagebrush	5-10

*Of plants in these groups, no more than 5% of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 15 to 25 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are annuals and broom snakeweed. Buffalograss and big sagebrush become more dominant as conditions deteriorate.

4. Total Annual Production in Exc. Cond. lb. Ac. air-dry

Favorable years	- 1,800
Medium years	- 1,400
Unfavorable years -	900

5. Soils:

a. The soils of this site are deep to moderately deep (greater than 20" to bedrock), well to poorly drained, slowly permeable and occur on slopes of 10% or less. The topsoil, except for thin, ineffectual layers, will be heavy clays and/or soils which develop large cracks when dry and are very sticky when wet. These soils are not high in salinity and/or alkalinity.

b. Soil taxonomic units which characterize this site are:

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good spring, summer and fall forage for cattle, sheep and horses.

2. Wood Products - None.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for high runoff. The soil cover complex numbers are:

Excellent	80
Good - high fair	85
Fair	90

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - Recreation value for this site is limited to hunting.

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class	Percent Climax Vegetation	AUM's/Acre	Acres/AUM
Excellent	76 - 100	.5	2.0
Good	51 - 75	.4	2.5
Fair	26 - 50	.25	4.0
Poor	0 - 25	.12	8.3

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

Technical Guide, Section IIB
Major Land Resource Area (61)
15-19" Black Hills (15-19B1)
SHALLOW SANDY SwSy
Correlated Range Site No.G61XY166WY

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site usually occurs on steep slopes and ridge tops, but may occur on all slopes. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by tall and midgrasses. Potential vegetation is about 75% grasses and grass like plants, 15% forbs and 10% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Prairie sandreed	25-35
Needleandthread	20-30
Bluebunch wheatgrass	10-15
Western wheatgrass	5-10
Little bluestem	5-10
Sand bluestem	5-10
Spikefescue	5-10
Threadleaf sedge	5-10
All following Grasses and Grass-like Plants	5-15*
Blue grama	Indian ricegrass
Spike oatgrass	Sideoats grama
Hairy grama	Sandberg bluegrass
Stonyhills muhly	Prairie junegrass
Sand dropseed	
Forbs	
All following Forbs	5-15*
Penstemons	Prairieclovers
American vetch	Bluebells
Groundsel	Dotted gayfeather
Cudweed sagewort	Green sagewort
Silverleaf scurfpea	Stonecrop
Erigeron	Common commandra
Mountain thermopsis	Yucca
Woody Plants	
All following Woody Plants	5-10*
Snowberry	Skunkbush sumac
	Wild rose

*Of plants in these groups, no more than 5% of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 15 to 25 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are broom snakeweed and annuals. Threadleaf sedge, blue grama and forbs become more dominant as conditions deteriorate.

4. Total Annual Production in Exc. Cond. (lb./Ac. air-dry)

Favorable years	- 1,800
Medium years	- 1,400
Unfavorable years -	900

5. Soils:

a. The soils of this site are shallow (less than 20" to bedrock), well drained, rapidly permeable and may occur on all slopes. The bedrock may be of any kind except igneous or volcanic and is virtually impenetrable by plant roots. The soil textures are a fine sandy loam or coarser. Thin ineffectual layers of other soil textures are disregarded.

b. Soil taxonomic units which characterize this site are:

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good spring, summer and fall forage for cattle, sheep and horses.

2. Wood Products - None.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for moderate runoff. The soil cover complex numbers are:

Excellent	70
Good - high fair	75
Fair	80

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - This site produces a wide variety of wild flowers in spring and summer. Recreation value is limited to hunting.

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class Percent Climax Vegetation AUM's/Acre Acres/AUM

Excellent	76 - 100	.4	2.5
Good	51 - 75	.3	3.3
Fair	26 - 50	.2	5.0
Poor	0 - 25	.1	10.0

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

Technical Guide, Section IIB
Major Land Resource Area (61)
1 5-1 9" Black Hills (1 5-1 9B1)
SHALLOW LOAMY SwLy
Correlated Range Site No.G61XY162WY

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site usually occurs on steep slopes and ridge tops, but may occur on all slopes. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by tall and midgrasses. Potential vegetation is about 80% grasses and grass like plants, 10% forbs and 10% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Little bluestem	10-25
Bluebunch wheatgrass	10-25
Needleandthread	10-15
Western wheatgrass	5-15
Spikefescue	5-1 0
Sideoats grama	5-10
All Following Grasses and Grass-like Plants	5-15*
Blue grama	Prairie junegrass
Threadleaf sedge	Blue wildrye
Spike oatgrass	Fowl bluegrass
Hairy grama	Sandberg bluegrass
Stonyhills muhly	Timber danthonia
Forbs	
All following Forbs	5-10*
American vetch	Prairieclovers
Penstemons	Bluebells
Biscuitroot	Silverleaf scurfpea
Mountain thermopsis	Stonecrop
Gromwell	Western wallflower
Common commandra	Fleabane
Woody Plants	
Winterfat	T-5
Skunkbush sumac	T-5

*Of plants in these groups, no more than 5% of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 15 to 25 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are annuals and broom snakeweed. Blue grama and threadleaf sedge become more dominant as conditions deteriorate.

4. Total Annual Production in Exc. Cond. (lb./Ac. air-dry)

Favorable years	- 1,800
Medium years	- 1,400
Unfavorable years =	900

5. Soils:

a. The soils of this site are shallow (less than 20" to bedrock), well drained, moderately permeable and may occur on all slopes. The bedrock may be of any kind except igneous, and is virtually impenetrable to plant roots. The soil textures range from a very fine sandy loam to the light sandy clay loams, light silty clay loams and clay loams. Thin ineffectual layers of other texture are disregarded.

b. Soil taxonomic units which characterize this site are:
LaPorte loam, Spearfish

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good spring, summer and fall forage for cattle, sheep and horses.

2. Wood Products - None.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for moderate runoff. The soil cover complex numbers are:

Excellent	70
Good - high fair	75
Fair	80

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - This site produces a wide variety of wild flowers in spring and summer. Recreation value is limited to hunting.

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class	Percent Climax Vegetation	AUM's/Acre	Acres/AUM
Excellent	76 - 100	.4	2.5
Good	51 - 75	.3	3.3
Fair	26 - 50	.2	5.0
Poor	0 - 25	.1	10.0

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

Technical Guide, Section IIB
Major Land Resource Area (61)
15-19" Black Hills (15-19B1)
SHALLOW CLAYEY SwCy
Correlated Range Site No.G61XY158WY

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site usually occurs on steep slopes and ridge tops but may occur on all slopes. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by tall and midgrasses. Potential vegetation is about 80% grasses and grass like plants, 10% forbs and 10% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Western wheatgrass	20-30
Sideoats grama	5-15
Little bluestem	5-10
Bluebunch wheatgrass	5-10
Green needlegrass	5-10
Prairie dropseed	5-10
Prairie junegrass	5-10
All following Grasses and Grass-like Plants	5-15*
Blue wildrye	Spike oatgrass
Fowl bluegrass	Blue grama
Hairy grama	Sandberg bluegrass
Plains reedgrass	Timber danthonia
Buffalograss	
Forbs	
All following Forbs	5-10*
American vetch	Prairieclovers
Bluebells	Penstemon
Biscuitroot	Common commandra
Mountain thermopsis	Hawksbeard
Erigeron	
Woody Plants	
Winterfat	T-5
Big sagebrush	T-5

*Of plants in these groups, no more than 50 of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 15 to 25 percent.

d. Species that are not a part of but are most likely to invade this broom snakeweed and annuals. Blue become more dominant as conditions the climax plant community, site if condition declines are grama and unpalatable forbs deteriorate.

4. Total	Annual Production in Exc.	Cond. (lb./Ac. air-dry)
	Favorable years	- 1,800
	Medium years	- 1,400
	Unfavorable years -	900

5. Soils:

a. The soils of this site are shallow (less than 20" to bedrock), well drained, moderately to slowly permeable and may occur on all slopes. The bedrock is clay shale which is virtually impenetrable to plant roots. The following soil textures are included in this site: silty clay, the finer portions of sandy clay loam, clay loam or silty clay loam and all clays. Thin ineffectual layers of other soil textures are disregarded.

b. Soil taxonomic units which characterize this site are:
Samsil

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good spring, summer and .fall sheep forage for cattle, and horses.

2. Wood Products - None.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for high runoff. The soil cover complex numbers are:

Excellent	75
Good - high fair	80
Fair	85

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - This site produces a wide variety of wild flowers in spring and summer. Recreation value is limited to hunting.

Technical Guide, Section IIB
Major Land Resource Area (61)
15-19" Black Hills (15-19B1)

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class Percent Climax Vegetation AUM's/Acre Acres/AUM

Excellent	76 - 100	.4	2.5
Good	51 - 75	.3	3.3
Fair	26 - 50	.2	5.0
Poor	0 - 25	.1	10.0

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

Technical Guide, Section IIB
Major Land Resource Area (61)
15-19" Black Hills (15-19B1)
VERY SHALLOW VS
Correlated Range Site No.G61 XY176WY

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site occurs on all slopes. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by tall and midgrasses. Potential vegetation is about 70% grasses and grass like plants, 15% forbs and 15% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Bluebunch wheatgrass	20-35
Little bluestem	15-25
Stonyhills muhly	5-10
Spikefescue	5-10
Sideoats grama	5-10
All following Grasses and Grass-like Plants	5-15*
Western wheatgrass	Blue grama
Big bluestem	Sand bluestem
Green needlegrass	Big bluegrass
Prairie sandreed	Needleandthread
Timber danthonia	Red threeawn
Sandberg bluegrass	Threadleaf sedge
Hairy grama	
Forbs	
All following Forbs	5-15*
Stonecrop	Nailworts
Buckwheat	Erigeron
Cudweed sagewort	Fringed sagewort
Woody Plants	
Conifers	5-10
Hawthorne	T-5
Skunkbush sumac	T-5

*Of plants in these groups, no more than 5% of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 5 to 15 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are annuals. Mat-forming forbs become more dominant as conditions deteriorate. If condition further deteriorates, bare ground becomes common.

4. Total Annual Production in Exc. Cond. (lb./Ac. air-dry)

Favorable years	- 900
Medium years	- 700
Unfavorable years	- 500

5. Soils:

a. The soils of this site are very shallow, well drained, rapidly to slowly permeable and can be of any texture. This site usually occurs on steep slopes. The soil -is generally less than 10 inches deep. Bedrock will include all kinds except soft clay shales, igneous and some volcanic.

b. Soil taxonomic units which characterize this site are:

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site provides good spring, summer and fall forage for cattle, sheep and horses. Grazing is sometimes limited by inaccessibility caused by steep slopes.

2. Wood Products - Ponderosa pine can occupy this site but not in large enough quantities to be significant for wood products.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for high runoff. The soil cover complex numbers are:

Excellent	85
Good - high fair	90
Fair	95

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - The steep slopes with rock outcrops and a variety of woody plants including ponderosa pine and juniper provide value for natural beauty. Recreation value is limited to hunting.

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class Percent Climax Vegetation AUM's/Acre Acres/AUM

Excellent	76 - 100	.3	3.3
Good	51 - 75	.2	5.0
Fair	26 - 50	.1	10.0
Poor	0 - 25	.05	20.0

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance

Technical Guide, Section IIB
Major Land Resource Area (61)
1 5-1 9" Black Hills (1 5-1 9B1)
SHALE Sh
Correlated Range Site No.G61XY154WY

RANGE SITE DESCRIPTION

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features - This site occurs on lands with moderate to steep slopes. The elevation ranges from 3,500 to 5,000 feet.

2. Climatic Features - See attached climatic description.

3. Native (climax) Vegetation

a. The climax plant community is dominated by tall and midgrasses. Potential vegetation is about 85% grasses and grass like plants, 5% forbs and 10% woody plants.

b. Plant species and percentages found in the climax plant community by air-dry weight are:

SPECIES	PERCENT
Grasses and Grass-like Plants	
Western wheatgrass	10-25
Bluebunch wheatgrass	5-10
Green needlegrass	5-10
Inland saltgrass	5-10
All following Grasses and Grass-like Plants	5-10*
Little bluestem	Timber danthonia
Buffalograss	Sandberg bluegrass
Forbs	
All following Forbs	5-10*
Eriogonum	
Woody Plants	
Conifers	5-10
Big sagebrush	T-5

Of plants in these groups, no more than 5% of any species is allowable in the potential plant community.

c. Density of herbage cover by ocular estimate may vary from 5 to 15 percent.

d. Species that are not a part of the climax plant community, but are most likely to invade this site if condition declines are annuals. Unpalatable forbs become more dominant as conditions deteriorate. If condition further deteriorates, bare ground becomes common.

4. Total Annual Production in Exc. Cond. lb. Ac. air-dry

Favorable years	- 700
Medium years	- 500
Unfavorable years	- 300

5. Soils:

a. The soils of this site are very shallow, well drained, rapidly to slowly permeable and can be of any texture. This site usually occurs on steep slopes. The soil is generally less than 10 inches deep with many outcrops of clay shale bedrock. These clay shales are usually salty in various degrees and normally produce some species of halophytes.

b. Soil taxonomic units which characterize this site are:

c. Complete soils descriptions are available in the soil survey descriptive legend.

B. MAJOR USES AND INTERPRETATIONS FOR:

1. Grazing - This site produces the least amount of forage and grazing is sometimes limited by access on steep slopes. Quality of forage is good for cattle, horses and sheep in summer and fall.

2. Wood Products - Ponderosa pine can occupy this site but not in large enough quantities to be significant for wood products.

3. Wildlife - See attached description.

4. Watershed (Hydrologic Interpretations)-This range site has a potential for high runoff. The soil cover complex numbers are:

Excellent	80
Good - high fair	85
Fair	90

(See Section 4, SCS National Engineering Handbook for runoff quantities and hydrologic curves.)

5. Recreation and Natural Beauty - Recreation value on this site is low except for hunting and nature study. Natural beauty provided by this site includes contrast of colors and wild flowers in spring and summer.

6. Threatened or endangered plants and animals - See wildlife description.

7. Location of Typical Examples of This Site (To be determined at the local field offices.)

8. Other Pertinent Information

GUIDE TO SUGGESTED INITIAL STOCKING RATE

Condition Class Percent Climax Vegetation AUM's/Acre Acres/AUM

Excellent	76 - 100	.3	3.3
Good	51 - 75	.2	5.0
Fair	26 - 50	.1	10.0
Poor	0 - 25	.05	20.0

RELATIVE FORAGE QUALITY OF PLANTS FOR ANIMAL USE-(See Attached Sheet)

9. Field Offices - Newcastle, Sundance